

ABSTRACT OF THE DISCLOSURE

A multi-band high-frequency circuit for performing wireless communications among pluralities of communication systems having different communication frequencies, comprising a high-frequency switch circuit comprising switching elements for switching the connection of pluralities of multi-band antennas to transmitting circuits and receiving circuits; a first diplexer circuit disposed between the high-frequency switch circuit and transmitting circuits for branching a high-frequency signal into frequency bands of the communication systems; a second diplexer circuit disposed between the high-frequency switch circuit and receiving circuits for branching a high-frequency signal into frequency bands of the communication systems; the first and second diplexer circuits each comprising a lower-frequency filter circuit and a higher-frequency filter circuit, a bandpass filter circuit being used as the lower-frequency filter circuit in the second diplexer circuit, or disposed between the lower-frequency filter circuit in the second diplexer circuit and the receiving circuit, so that there is a bandpass filter between the second diplexer circuit and a lower-frequency receiving circuit; the high-frequency switch circuit comprising first to fourth ports, the first port being connected to a first multi-band antenna, the second port being connected to a second multi-band antenna, the third port being connected to the first diplexer circuit, and the fourth port being connected to the second diplexer circuit; and the switching elements being controlled in an ON or OFF state to select a multi-band antenna for performing wireless communications and to switch the connection of the selected multi-band antenna to the transmitting circuit or the receiving circuit.